# Cross-border Banking and Financial Deepening:

# The African Experience

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**Abstract**

*Cross-border banking has been important across Africa for a long time, with regional banks taking on a more prominent role only recently. This paper provides an overview over the literature of cross-border banking and financial deepening and inclusion, with a focus on Africa. It also offers suggestive evidence that it is critical to differentiate between different types of cross-border banks when assessing their impact on firms' access to bank finance. Finally, it discusses the regulatory agenda in light of the recent crisis experience and the new cross-border banking patterns.*

**Keywords:** Sub-Saharan Africa; Cross-Border Banking; Firms' Access to Bank Finance

**JEL Classification:** G2; G3; O55

## 1. Introduction

Africa has been traditionally the region with the highest share of cross-border banks, to be surpassed only in the 2000s by the former transition economies of Central and Eastern Europe. However, the composition of cross-border banks in Africa has undergone a distinct change over the past 20 years, with banks from across Africa and other emerging markets taking on a larger role in Africa's financial systems. What has been the effect of these trends on competition, financial deepening and inclusion, and financial stability across the continent? Have cross-border banks and more specifically the rising regional banks contributed to the recent deepening process across Africa? What are the regulatory implications of these trends, also in light of recent experiences in Western, Central and Eastern Europe?

This paper discusses patterns and recent trends in cross-border banking across the region and their implications for financial development and stability. Using a new bank-level data source on foreign banks' home countries, we document the relative importance of banks from Africa, other emerging markets and developed economies over time and across countries in Africa. We offer a short literature survey on the effects of cross-border banking on financial deepening and inclusion and its implications for Africa. We offer suggestive regression analysis of the relationship between the relative importance of different groups of cross-border banks and firms' access to bank finance. We also discuss the regulatory implications of these trends in cross-border banking, including for cooperation between supervisors within the region.

There is a rich literature on the effects of cross-border banking at the cross-country, regional and country-level using an array of data sources, including aggregate financial development data, bank-level competition, stability and outreach data and household and firm-level indicators of access to and use of financial services. Most of the cross-country studies, however, include only few African countries and there are few studies gauging the effects of cross-border banking specifically for African countries. In addition to offering tentative evidence on the effects of cross-border banking and its structure on financial deepening and inclusion in Africa, this paper makes also the call for more in-depth studies focusing specifically on Africa.

The paper is related to a small literature on banking sector development in Africa. Among recent studies, Allen et al., (2012) use cross-country regressions to benchmark African financial development based on its correlates in other developing countries, revealing a substantial gap between predicted and actual levels of African financial development, partly related to low population density, which results in higher transaction costs. Beck and Hesse (2009) gauge the determinants of high interest rate spreads in a rather typical small African economy, Uganda. A rapidly growing literature has used quasi-natural experiments and randomized control trials to assess the effect of specific financial innovations on the bank or product-level (see Beck and Cull, 2014a for an overview). For a more critical review of the

role of finance in African development see Barnebeck et al., (2012) who point to continuously low levels of financial development across large parts of the continent and the limited role that rudimentary financial systems can play in resource allocation and productivity growth. This is somewhat confirmed by Rousseau and D'Onofrio (2013) who find that the positive effect of financial system development on growth across most of Africa comes through monetization effects rather than intermediation effects. On a broader and more policy-oriented level, Honohan and Beck (2007) and Beck et al., (2011) discuss the financial sector challenges across Africa and summarize lessons from recent bank- and country-level experiences with financial innovation and regulatory policies.

Many African financial systems have been changing and developing rapidly over the past decade. After disappointing results of financial liberalization in the 1980s and 90s for financial development and inclusion, African banking systems entered the 21st century more stable and better capitalized, though also over-liquid. The past ten years, however, have seen a persistent trend towards financial deepening across many African countries, even through the Global Financial Crisis. Financial innovation in the form of new financial service providers, new products and new delivery channels has helped expand the population with access to financial services in many countries. Cross-border banking including the expansion of regional banks has been an integral part of this development process, although it might be difficult to pinpoint causality going from one phenomenon to the other.

The remainder of the paper is structured as follows. The next section discusses patterns and trends of cross-border banking in Africa. The third section offers a short literature survey on the effects of cross-border banking on financial development and stability. Section 4 offers some empirical evidence on the relationship between cross-border banking and firms' access to bank finance. Section 5, finally, offers some lessons on how to maximize the benefits and minimize the risks of cross-border banking.

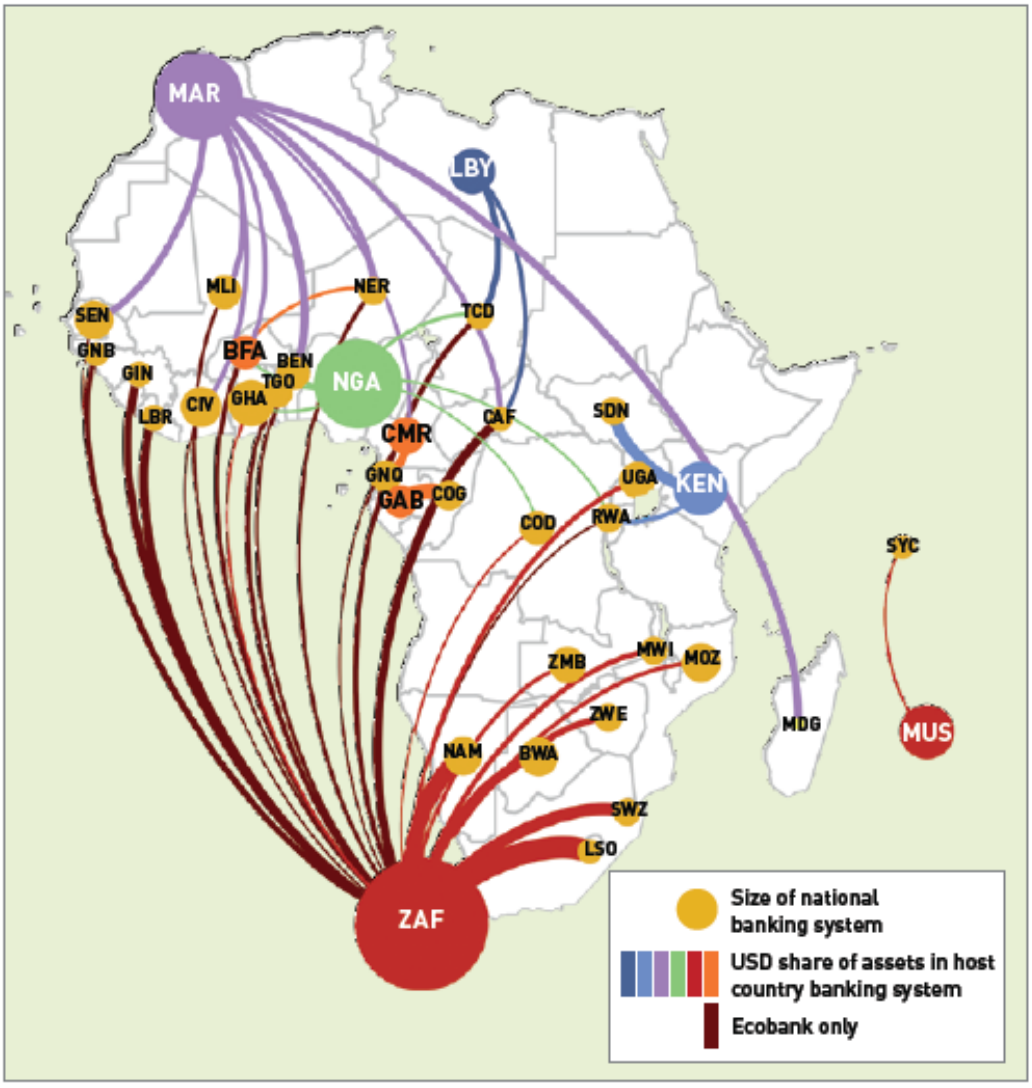
## 2. Cross-border banking in Africa – patterns and trends

Cross-border banking has been a critical part of African financial history since colonial times. While the period after independence saw a wave of nationalization across the continent, with many of the colonial banks leaving, this trend was reversed in the 1980s with the arrival of financial liberalization. Failing state-owned and private banks were sold mostly to global investors or cross-border banks, often the same global banks that had been expropriated earlier. By the mid-2000s, many African banking systems were yet again dominated by foreign banks. However, there is a large variation within the continent. On the one extreme, countries like Ethiopia and Eritrea are still completely closed to foreign capital in the banking system, while some smaller financial systems are almost completely dominated by foreign banks. The tendency of smaller financial systems to be dominated by foreign banks is independent of income levels, as the examples of Namibia and Madagascar show.

Over the past two decades, however, there has been a slow but increasing shift in the composition of the foreign bank population across the continent. After the end of Apartheid,

several South African banks, most notably Standard Bank and ABSA, started expanding through the continent. More recently, two West African banks – Ecobank and Bank of Africa – have begun expanding throughout Sub-Saharan Africa. Similarly, Moroccan banks have started to expand south. Finally, and as a consequence of the recent consolidation wave in Nigeria, Nigerian banks started expanding throughout West Africa, but increasingly also throughout the rest of the continent. And in recent years, Kenyan banks have started to expand throughout East Africa.

**Figure 1: Ownership Linkages Among African Banks**




Note: The graph only shows ownership linkages between countries if the share of assets held by home countries constitutes at least 10 percent of the host country's banking system. The size of the bubbles is in proportion to the absolute size of each country's banking sector. The reference year is 2011; where 2011 data was not available, figures from 2009-2012 were used instead. Sources: Central Bank websites, annual reports of banking groups, Claessens and van Horen (2014) Bank Ownership Database, World Bank/IMF country reports, GIZ (2012a, 2012b, 2012c, 2012d)

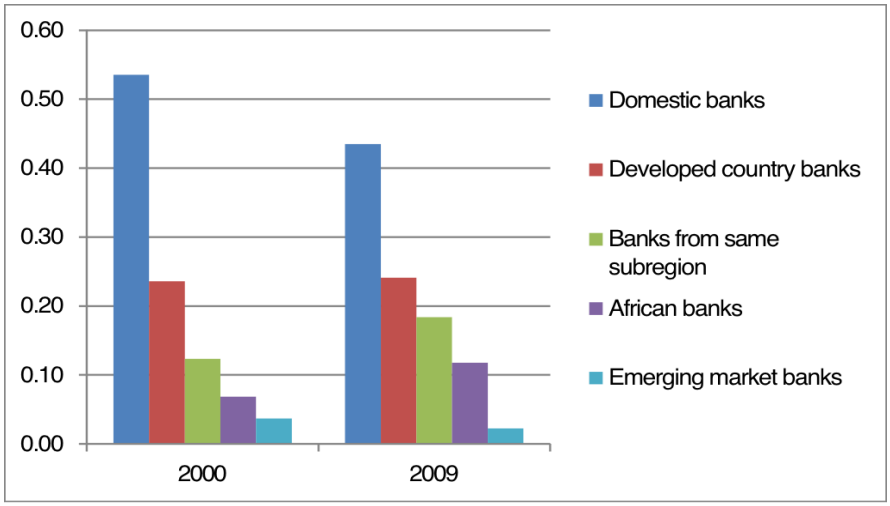
*Source:* Beck, Fuchs, Singer and Witte (2014)

The importance of cross-border banking can be illustrated both on the bank and the country level. Several multinational banks are present across the continent. Specifically, Ecobank is now active in 32 countries, while the South African Standard Bank has expanded into 16 countries. United Bank of Africa operates in 20 African countries. Figure 1 illustrates the increasing linkages in bank ownership across the continent. European banks such as Standard Chartered or BNP Paribas continue to be active across large parts of the continent. Some of this expansion has come through merger and acquisition activity, other through greenfield entry.

Figure 2 shows a dramatic change in the composition of bank population in the average African country between 2000 and 2009. Specifically, we distinguish between five different ownership groups, where the classification is according to the dominating shareholder (Claessens and van Horen, 2014). The first group comprises banks that are domestically owned. The second group consists of banks that are subsidiaries or branches of banks whose headquarters is in the sub-region, i.e., East, Southern or West Africa. The third group is subsidiaries or branches whose parent bank is not headquartered in the sub-region but somewhere else in Africa. The fourth group comprises foreign banks from non-African emerging markets, including India, China and Malaysia. The final group consists of banks with European or US parent banks.

Figure 2 shows that the average share of domestic banks fell from 54 in 2000 to 43 percent in 2009. The average share of foreign banks from developed economies, on the other hand, remained equal, with 24 percent. The average share of African banks, on the other hand, increased from 19 percent in 2000 to 30 percent in 2009. The average share of emerging country banks from outside Africa fell from 4 to 2 percent.

**Figure 2: Different bank ownership groups across Africa**




*Source*: author's calculations based on Claessens and van Horen (2014)

Behind this average, however, are large variations. Several large economies still have banking systems dominated by domestic banks, including Ethiopia with a 100 percent domestically owned banking system, but also Nigeria and South Africa where over 80 percent of banks are domestic. On the other extreme are countries with little if any domestic bank ownership, including Burkina Faso and Madagascar with only foreign-owned banks and Mozambique with less than 10 percent domestic owned banks. Many West African countries are dominated by banks from neighboring countries. Several countries have also experienced drastic changes over the period 2000 to 2009. For example, Mozambique has seen an increasing dominance by South African banks. Similarly, Rwanda has seen a shift from a domestic banking system towards a banking system with banks from West Africa and Kenya.

## 3. Cross-border banking and financial development – literature and hypotheses

The effects of cross-border banking on local financial systems have been controversial among economists and policy makers alike. If there is any consensus at all, then it would be that there is an enormous heterogeneity in the effects of cross-border banking across countries and time periods, with the effects often dependent on the local market structure, financial infrastructure and regulatory framework.[1]

Proponents of foreign bank entry argue that foreign banks have a comparative advantage when entering new markets in terms of better access to capital, economies of scale, risk diversification, lending technologies, and management expertise (see, for example, Detragiache et al., (2008), Clarke, Cull, Martínez Pería and Sanchez (2005)). Technological, cost and funding advantages of foreign banks allow them to offer new products, introduce new lending technologies and new delivery channels, attract deposits at higher rates and offer lower lending rates. Ultimately, this will increase competitive pressure on the other players in the banking market, with positive repercussions for financial deepening. By not being tied to incumbent borrowers and into existing networks of entrepreneurs, bankers, regulators, and politicians, foreign banks might push the financial system and the overall economy away from a narrow-based relationship model towards a more arms-length model.

Critics of foreign bank participation argue that foreign banks may have an overall negative effect on financial deepening and inclusion, partly based on the same advantages in costs and funding mentioned by advocates of foreign bank entry. First, distance constraints and informational disadvantages may prevent foreign banks from lending to small and opaque firms (see, for example, Mian (2006)). The competitive advantage of foreign banks described above can result in domestic banks being crowded out of the market and foreign banks focusing on the top-end of the market, thus leaving small and medium-sized enterprises and poorer households without access to financial services (for example, see Gormley 2010; Sengupta 2007; Detragiache et al., 2008).

[1] See Cull and Martinez Peria (2013) for an excellent recent literature survey.

Especially in Africa, with its many small, risky, and opaque enterprises, this dark side of foreign bank entry can become obvious, even more so in countries in which foreign banks have captured almost 100 percent of the banking market. Specifically, the greater reliance of foreign banks on hard information about borrowers as opposed to soft information can have negative repercussions for riskier and more opaque borrowers if foreign banks crowd out domestic banks.

The evidence on foreign banks' effect on access to financial services has been ambiguous, with findings varying across countries and regions and across different sources of data (household- , enterprise-survey and bank-level). On the cross-country level, Detragiache et al., (2008) show that a higher share of foreign banks is associated with a lower level and growth rate of financial depth across 89 low-income countries, while panel analysis presents a somewhat different picture (Cull and Martinez Peria, 2008). Using the World Business Environment Survey (WBES) with data on over 3,000 firms in 35 developing and transition countries, Clarke, Cull and Martinez Peria (2006) find a negative relationship in self-reported financing obstacles with the share of foreign banks in a country, a relationship that holds across firms of all sizes. Using data on 16,500 households across 19 emerging economies in Central and Eastern Europe, Beck and Brown (2014) show that a higher share of foreign banks in a country's banking system benefits the high-end of the household market more than the low-end, thus evidence for cherry-picking by foreign banks, though the authors cannot establish whether the overall effect on financial inclusion has been a negative one. This is similar to findings by Beck and Martinez Peria (2010) for Mexico who find that the rapid increase in foreign bank penetration in the late 1990s benefitted only richer and urban municipalities. Mian (2006) shows a large difference in clienteles between domestic and foreign banks for the case of Pakistan. Specifically, clients of foreign banks tend to be enterprises that are larger, located in larger cities, foreign-owned and part of business groups.

Recent papers have pointed to the important role of financial infrastructure for the effect of cross-border banking. Claessens and van Horen (2014) find that foreign banks have a negative impact on financial deepening in countries where they have a limited market share, where enforcing contracts is costly and where credit information sharing is limited. Similarly, Bruno and Hauswald (2014) show that the positive growth effect of foreign banks is a function of the contractual and information frameworks of the host countries.

The literature has also explored the relationship between the type of cross-border bank and access to credit. Specifically, Mian (2006) relates the distance between headquarters of the parent bank and loan officers in Pakistan to differences in clientele and shows that the difference between foreign and domestic bank increases in the distance of the parent's bank headquarters and Pakistan. Similar arguments as for the differences in lending techniques and hierarchal distance across domestic and foreign banks can also be made for differences between different types of foreign banks. Banks that are geographically, culturally or institutionally closer to the host country, can be expected to have shorter hierarchal distances, but might also be more accustomed to the clientele in the host country. Claessens and van

Horen (2014) confirm this conjecture on the aggregate level; any positive effect of cross-border banking on host country's financial development is lower the more distant the parent banks' headquarters are.

The literature on the relationship between cross-border banking and financial development has not specifically focused on Africa. Many of the cross-country studies include few African countries. But anecdotal evidence and country-specific analysis confirm many of the results presented in the literature. In Uganda, Uganda Commercial Bank (UCB), the largest government-owned bank – and also the largest bank in the system – was successfully privatized in the second attempt to the South African Standard Bank. Although an agreement not to close any branches was in place for two years following sale of UCB, Standard Bank kept all branches in place and opened even new ones. It introduced new products and even increased agricultural lending (Clarke, Cull and Fuchs, 2009). In Tanzania, the National Bank of Commerce was privatized after splitting it into a commercial bank that assumed most of the original bank's assets and liabilities, and the National Microfinance Bank, which assumed most of the branch network and the mandate to foster access to financial services. The new National Bank of Commerce's profitability and portfolio quality improved although credit growth was initially slow. Although finding a buyer for the National Microfinance Bank proved difficult, profitability eventually improved and lending grew, while the share of non-performing loans remained low (Cull and Spreng, 2011). Ultimately, Rabobank took management control of NMB.

Ecobank and Bank of Africa have often introduced new products into the markets they have entered, such as leasing and increased agricultural lending. On the other hand, one of the most successful financial institutions in terms of financial innovation and outreach, Equity Bank in Kenya, is a domestic financial institution. And Cull and Trandafir (2013) show for Uganda, that domestic banks have higher interest rate spreads, in line with a riskier loan portfolio, although they have lower overhead costs. The relatively high overhead costs and low profit margins for the foreign banks are consistent with the idea that they deal with a set of blue-chip clients whose projects are more costly to evaluate and maintain.

In summary, the existing literature has not provided unambiguous findings on the repercussions of cross-border banking for financial development and inclusion and neither has the African experience. In the next section, I will give some tentative evidence that it can be indeed important to distinguish between different groups of foreign banks when gauging their effect on financial development.

## 4. Cross-border banking and firms' access to finance in Sub-Saharan Africa

To explore the relationship between the structure of cross-border banking and firms' access to formal bank finance, we combine data from the Claessens and van Horen (2014) database on cross-border banking and the World Bank's Enterprise Surveys. The Claessens and van Horen data end in 2009, so we use data for 2009 and relate them to 29 Enterprise Surveys for 2006 or later. For each country we use the latest Enterprise Survey available. We use the

share of foreign banks in total banks as well as the share of developed country foreign banks and emerging/development market foreign banks separately as indicators of cross-border banking.[2]

We use two dummy variables from the Enterprise Surveys to gauge firms' access to and use of bank finance. The first dummy indicates whether a firm has a *loan* or not. As this only indicates an outcome but does not take into account whether the firm needs bank finance or not, we construct a second dummy variable constrained to take the value one if the firm does not have a loan and has not applied for a loan, because interest rates or collateral requirements are too high or other elements of the loan conditionality are not favourable. We denote a firm as not constrained if it either has a loan or indicates that it does not need one. Following Beck and Cull (2014b), we use the following probit regression, reporting marginal effects to gauge not only the statistical but also economic significance:

$$Finance_i = \alpha + \beta_1 \text{FIRM}_i + \beta_2 \text{SECTOR}_i + \beta_3 \text{BANKING}_j + \varepsilon_{ij} \quad (1)$$

where *Finance* is either of the two dummy variables discussed above. FIRM represents a set of variables that capture enterprise characteristics including size (small, medium, large), age, and ownership type (foreign, government, or private domestic). The previous literature has established a strong negative relationship between firm size, firm age and access to bank finance (e.g. Beck et al., 2006), while there is no unambiguous relationship between firm ownership and access to finance. The firm-level characteristics also include a dummy variable indicating whether the principal owner of the enterprise is female, which we expect to have a negative coefficient based on the literature (Demirguc-Kunt, Klapper, and Singer, 2013). We also include dummy variables describing each firm's organizational type (sole proprietorship, partnership, privately owned but not a sole proprietorship or partnership, and publicly traded). While simpler organizational forms, such as sole proprietorships, might find it more difficult to establish credit histories and amass collateral that would enable them to borrow from external sources, publicly traded firms have access to capital markets, and thus might rely less on bank finance. We also include 15 different sectoral dummy variables. BANKING is either the share of foreign banks among all banks or, separately, the share of developed country foreign banks and emerging/developing market foreign banks. As our explanatory variables only vary on the country-level and to take into account omitted country-level effect, we allow for correlation of error terms within but not across countries.

Combining the two data sources, we have available data for 29 African countries, with a large variation in both access to entrepreneurial finance and cross-border banking. Table 1 shows that the share of firms with a loan varies from close to zero in Angola to over 60 percent in Burundi and Mauritius. The share of financially constrained firms varies from seven percent in Mauritius to 75 percent in DRC. The share of developed foreign banks

[2] We prefer to use share among the number of banks rather than asset shares, as missing data in specific years or for specific banks might bias such market share indicators.

ranges from zero in Ethiopia, Malawi and Namibia to over 50 percent in Cameroon, Madagascar and Zambia, while the share of developing country foreign banks ranges from zero in Ethiopia and Togo to over 60 percent in Burkina Faso, Swaziland and Uganda.

Tables 2 and 3 present the regression results using the two dependent variables. For conciseness, we do not report the sectoral dummy variables. The results in column 1 of Table 2 do not point to a significant relationship between the share of foreign banks and firms' access to bank finance. The share of foreign banks does not enter significantly in the regression. Many of the firm-level variables, on the other hand, enter significantly. We find that foreign-owned firms, younger firms, small and medium-sized firms and firms organized as sole proprietorships or partnerships are less likely to have a bank loan. Surprisingly, we find that female-managed firms are more likely to have a loan, although this might be due to selection bias as discussed by Aterido, Beck and Iacovone (2013).

The results in column 2 show that the share of enterprises with a loan is higher in countries with more foreign banks from emerging and developing countries, while there is no significant relationship with the share of developed country foreign banks. The results are also economically large; a marginal increase of the share of banks from other emerging and developing markets is associated with 21 percent higher probability of firms of having a loan.

The results in columns 3 to 5 show that this relationship is statistically and economically stronger for small and large firms, while it is not significant for mid-sized firms. Similarly, columns 6 to 9 show that the effect is significant only for firms with less than 10 years of age, while the results are not significant for the two other age groups (firms between 10 and 24 and firms 25 years or older). For young firms, we also find a significantly negative relationship between the share of developed country foreign banks and the likelihood of having a bank loan. Across all specifications, the share of developed country foreign banks enters negatively in the regressions.

The results in Table 3 using our alternative dependent variable *Constrained* confirm our findings. In column 1, the overall share of foreign banks does not enter significantly. Many of the firm-level variables enter again significantly. Specifically, we find that foreign-owned firms are less constrained (although we also find that they are less likely to have bank finance), while government-owned firms are more constrained. Small and medium-sized firms are more constrained than large firms, while there is no significant relationship between firm age and financing constraints. Sole proprietors are more likely to be constrained.

The results in column 2 show that enterprises in countries with a higher share of developed country foreign banks are more likely to be constrained while there is no significant relationship for the developing country foreign bank share. When we split the sample according to firm size (Columns 3 to 5), we find that the negative effect of the developed country foreign bank share holds across all three firm size groups. Similarly, when we split the sample according to firm age, we find a constraint-increasing effect of the developed country foreign bank share across firms of all age groups. In none of the sample

splits does the share of developing country foreign banks enter significantly, although it enters negatively across all specifications.

In summary, our results suggest that it is critical to distinguish between different groups of foreign banks. We present tentative evidence of a positive relationship between the share of foreign banks from the region or other emerging markets and firms' access to finance and of a negative relationship between the share of foreign banks from Europe or the U.S. and entrepreneurial finance. It is important to stress that we cannot interpret these regression results in a causal manner, given their cross-sectional nature and potential omitted variable bias. They are, however, suggestive of the importance of taking a more granular approach towards cross-border banking. More in-depth studies going to the sub-national level (such as Popov and Udell, 2012 for Central and Eastern Europe), combining enterprise with bank-level surveys and thus supply- with demand-side analysis, and exploiting changes over time are called for to explore the relationship between bank ownership structure and firms' access to external finance in a more rigorous manner.

## 5. Looking forward

Financial integration has the potential to offer enormous benefits to African economies, though risks should not be underestimated. Foreign banks, especially banks from other emerging and developing countries with the necessary expertise, can significantly contribute to the financial innovation necessary for financial deepening in Africa. Foreign banks can also foster competition that provides the necessary incentives for financial innovation. However, benefits from cross-border banking and, more generally, financial integration, can only be reaped in the context of a broader financial reform agenda, including improvements in contractual and information frameworks.

As already mentioned above, cross-border banking can also be associated with stability benefits but also with stability risks.[3] Foreign banks can bring additional strength to a banking system not only after a crisis, but can also be an important risk diversification tool. These benefits are maximized in the case of a diversified foreign bank population in the host economy. First of all, the presence of foreign banks allows domestic firms to have multiple lending relationships with domestic and foreign banks. When domestic banks are lending-constrained, firms can substitute domestic lending with finance from foreign banks. In addition, even if individual firms cannot obtain more financing from foreign banks following a domestic shock, overall lending in the economy will be less volatile as only the domestically financed firms are affected.

However, there are important stability risks as well. First of all, foreign capital is likely to be more mobile than domestic capital, which can introduce an element of volatility. There is also contagion risk: in the same way as cross-border banking insulates the host economy

[3] For the following, see a more in-depth discussion in chapter 3 of Allen et al., (2011).

from domestic shocks, it also exposes it to foreign shocks. A credit shock to one economy, for example, can be propagated more easily to the other economy, if both countries are financially integrated.

Cross-border banking will pose an increasing challenge for regulators across Africa. The need for bank regulation and supervision is based on the recognition that bank failure imposes costs on other financial institutions and the real economy that are external to the failing financial institution and thus not internalized by the risk decision takers. Financial integration, however, also implies external costs of bank failure beyond national borders that are not taken into account by national regulators and supervisors.[4] Close cooperation that can help internalize these cross-border externalities is called for, though the institutional extent of such cooperation should not only be a function of the strength of externalities but also the heterogeneity of countries' legal and regulatory frameworks (Beck and Wagner, 2013).

Regulators across the region have started to cooperate more intensely over the past years, signing Memorandums of Understanding and establishing Colleges of Supervisors. There is a clear pattern in this cooperation, with much stronger links between neighboring countries and sub-regions with closer economic and financial integration than between geographically more distant countries. The recently established Committee of African Bank Supervisors as part of the African Association of Central Banks can give this cooperation further impetus, by enabling informal exchange of information and experiences and networking possibilities.

Two issues appear critical in this increasing regulatory cooperation. First, based on the experience of European countries, there should be a focus on proper preparation for resolution. Non-binding Memorandums of Understanding and Colleges of Supervisors limited to information exchange are of limited use in times of bank failure, as European regulators found out the hard way in 2008. Second, it is important to not ignore development benefits of cross-border banking when considering them as potential source of fragility. Financial Stability is not an objective in itself, but rather a necessary condition for sustainable financial deepening, with the goal of economic development and poverty alleviation.

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[4] See Beck, Todorov and Wagner (2013) for a theoretical model and empirical evidence on this.

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**Table 1: Entrepreneurial finance and cross-border banking across Africa**

| | Loan | Constrained | Developed country foreign bank share | Developing country foreign bank share |
|---|---|---|---|---|
| Angola | 0.00 | 0.40 | 0.4 | 0.1 |
| Benin | 0.19 | 0.52 | 0.22 | 0.56 |
| Botswana | 0.56 | 0.15 | 0.2 | 0.3 |
| Burkina Faso | 0.29 | 0.58 | 0.38 | 0.63 |
| Burundi | 0.63 | 0.21 | 0.25 | 0.25 |
| Cameroon | 0.50 | 0.41 | 0.5 | 0.3 |
| DRC | 0.14 | 0.75 | 0.44 | 0.22 |
| Ethiopia | 0.26 | 0.45 | 0 | 0 |
| Ghana | 0.21 | 0.56 | 0.24 | 0.24 |
| Ivory Coast | 0.24 | 0.60 | 0.31 | 0.46 |
| Kenya | 0.54 | 0.21 | 0.14 | 0.18 |
| Madagascar | 0.24 | 0.45 | 0.5 | 0.5 |
| Malawi | 0.41 | 0.32 | 0 | 0.43 |
| Mali | 0.24 | 0.72 | 0.13 | 0.38 |
| Mauritania | 0.47 | 0.53 | 0.25 | 0.13 |
| Mauritius | 0.62 | 0.07 | 0.23 | 0.46 |
| Mozambique | 0.15 | 0.59 | 0.45 | 0.45 |
| Namibia | 0.33 | 0.14 | 0 | 0.43 |
| Niger | 0.29 | 0.38 | 0.29 | 0.57 |
| Nigeria | 0.10 | 0.59 | 0.11 | 0.05 |
| Rwanda | 0.56 | 0.26 | 0.14 | 0.43 |
| Senegal | 0.21 | 0.57 | 0.45 | 0.36 |
| South Africa | 0.37 | 0.17 | 0.15 | 0.04 |
| Swaziland | 0.30 | 0.11 | 0.2 | 0.6 |
| Tanzania | 0.25 | 0.50 | 0.24 | 0.4 |
| Togo | 0.43 | 0.35 | 0.17 | 0 |

| | | | | |
|---|---|---|---|---|
| Uganda | 0.32 | 0.49 | 0.18 | 0.65 |
| Zambia | 0.30 | 0.34 | 0.56 | 0.33 |
| Zimbabwe | 0.16 | 0.65 | 0.15 | 0.16 |

## Table 2: Cross-border banking and firms' use of bank finance

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Foreign-owned | -0.0349** | -0.0350** | -0.0284 | -0.0127 | -0.0916*** | -0.0337* | -0.0299 | -0.0403 |
| | [0.037] | [0.037] | [0.109] | [0.580] | [0.009] | [0.075] | [0.260] | [0.183] |
| Government-owned | -0.0142 | -0.0013 | | 0.0076 | 0.0381 | 0.037 | 0.0013 | -0.0281 |
| | [0.688] | [0.969] | | [0.904] | [0.548] | [0.555] | [0.983] | [0.634] |
| Ln(Age) | 0.0170* | 0.0187* | 0.0104 | 0.0237 | 0.0450** | 0.0041 | 0.0665** | 0.0003 |
| | [0.095] | [0.062] | [0.180] | [0.140] | [0.024] | [0.747] | [0.039] | [0.992] |
| Small | -0.225*** | -0.229*** | | | | -0.1762*** | -0.2244*** | -0.3064*** |
| | [0.000] | [0.000] | | | | [0.000] | [0.000] | [0.000] |
| Medium-size | -0.098*** | -0.098*** | | | | -0.0633* | -0.0901*** | -0.1731*** |
| | [0.000] | [0.000] | | | | [0.061] | [0.002] | [0.000] |
| Female manager | 0.0531* | 0.0534* | 0.0239 | 0.1640*** | -0.0331 | 0.0283 | 0.0812** | 0.0755** |
| | [0.061] | [0.052] | [0.217] | [0.004] | [0.584] | [0.416] | [0.023] | [0.031] |
| Partnership | -0.0822* | -0.0828* | -0.0648 | -0.1377** | -0.1356 | -0.0613 | -0.0677 | -0.1757** |
| | [0.056] | [0.059] | [0.116] | [0.026] | [0.149] | [0.105] | [0.305] | [0.020] |
| Private | -0.0264 | -0.0267 | -0.0498 | -0.0655 | 0.06 | -0.0408 | -0.0164 | -0.014 |
| | [0.467] | [0.467] | [0.201] | [0.119] | [0.505] | [0.235] | [0.790] | [0.831] |
| Sole proprietor | -0.145*** | -0.141*** | -0.141*** | -0.19*** | -0.1603 | -0.1521*** | -0.1346* | -0.1152 |
| | [0.000] | [0.001] | [0.004] | [0.000] | [0.102] | [0.000] | [0.052] | [0.105] |
| Public firm | -0.0598 | -0.0657* | -0.0773* | -0.1638*** | 0.0317 | -0.0644 | -0.1040* | -0.0389 |
| | [0.122] | [0.065] | [0.095] | [0.003] | [0.725] | [0.211] | [0.072] | [0.663] |
| All foreign banks | 0.0652 | | | | | | | |
| | [0.390] | | | | | | | |
| Developing country | | 0.2080* | 0.1926** | 0.1797 | 0.2562* | 0.2037* | 0.1919 | 0.2123 |
| foreign banks | | [0.069] | [0.042] | [0.257] | [0.088] | [0.058] | [0.119] | [0.135] |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Developed country | | -0.1415 | -0.1081 | -0.1221 | -0.2981 | -0.1839** | -0.0926 | -0.1299 |
| foreign banks | | [0.175] | [0.189] | [0.387] | [0.130] | [0.043] | [0.419] | [0.457] |
| Observations | 12,716 | 12,716 | 7,641 | 3,582 | 1,465 | 5,949 | 4,678 | 2,080 |
| Sample restrictions | | | Small firms | Medium-sized firms | Large firms | Young firms | Mid-aged firms | Old firms |

## Table 3: Cross-border banking and firms' financing constraints

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Foreign-owned | -0.0454* | -0.0448* | -0.094*** | -0.031 | 0.0215 | -0.075*** | -0.0443 | -0.0006 |
| | [0.078] | [0.072] | [0.002] | [0.318] | [0.402] | [0.003] | [0.271] | [0.989] |
| Government-owned | 0.0815* | 0.0597 | 0.1273 | 0.0575 | 0.0116 | 0.0407 | 0.0538 | 0.0587 |
| | [0.080] | [0.175] | [0.119] | [0.324] | [0.810] | [0.540] | [0.507] | [0.371] |
| Ln(Age) | -0.0108 | -0.0128 | -0.0144 | -0.0078 | -0.0047 | -0.0006 | -0.0465 | 0.0562 |
| | [0.488] | [0.390] | [0.241] | [0.727] | [0.783] | [0.970] | [0.239] | [0.146] |
| Small | 0.3038*** | 0.3096*** | | | | 0.3138*** | 0.2872*** | 0.3363*** |
| | [0.000] | [0.000] | | | | [0.000] | [0.000] | [0.000] |
| Medium-size | 0.1361*** | 0.1376*** | | | | 0.1415*** | 0.1066*** | 0.1814*** |
| | [0.000] | [0.000] | | | | [0.000] | [0.006] | [0.000] |
| Female manager | -0.016 | -0.0179 | -0.0256 | 0.0106 | 0.0535 | -0.0184 | -0.0402 | 0.0298 |
| | [0.643] | [0.604] | [0.447] | [0.834] | [0.285] | [0.666] | [0.279] | [0.554] |
| Partnership | 0.0937 | 0.0941 | 0.0878 | 0.1526* | 0.0622 | 0.0306 | 0.1139 | 0.1540* |
| | [0.148] | [0.167] | [0.237] | [0.065] | [0.402] | [0.645] | [0.136] | [0.069] |
| Private | -0.0661 | -0.0694 | -0.0354 | -0.033 | -0.1063 | -0.0925 | -0.0432 | -0.0839 |
| | [0.210] | [0.219] | [0.644] | [0.561] | [0.163] | [0.156] | [0.483] | [0.200] |
| Sole proprietor | 0.1345*** | 0.1260** | 0.1447** | 0.1477** | 0.0396 | 0.086 | 0.1521** | 0.1274* |
| | [0.008] | [0.021] | [0.045] | [0.014] | [0.625] | [0.133] | [0.020] | [0.089] |
| Public firm | -0.0238 | -0.0139 | 0.0191 | 0.0181 | -0.0769 | -0.064 | 0.0384 | -0.0438 |
| | [0.770] | [0.860] | [0.891] | [0.867] | [0.211] | [0.591] | [0.691] | [0.681] |
| All foreign banks | 0.0288 | | | | | | | |
| | [0.767] | | | | | | | |
| Developing country | | -0.1936 | -0.2623 | -0.0316 | -0.0826 | -0.2481 | -0.1121 | -0.1744 |
| foreign banks | | [0.261] | [0.122] | [0.842] | [0.432] | [0.124] | [0.513] | [0.468] |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Developed country | | 0.3452** | 0.3199* | 0.2963** | 0.3047** | 0.3867** | 0.3131** | 0.3143* |
| foreign banks | | [0.024] | [0.065] | [0.020] | [0.011] | [0.012] | [0.049] | [0.097] |
| Observations | 12,727 | 12,727 | 7,672 | 3,586 | 1,468 | 5,952 | 4,687 | 2,082 |
| Sample restrictions | | | Small firms | Medium-sized firms | Large firms | Young firms | Mid-aged firms | Old firms |